Red Hill Bulk Fuel Storage Facility

Congressional Staff Update

26 January 2017

Red Hill Description

- Twenty Vertical, Capsule Shaped Petroleum Tanks
  - Each tank is 250’ tall and 100’ in diameter with a capacity of 12.5M gallons (~250M gallons total)
  - Tanks are lined with ¼” steel encased in 2.5-4’ concrete walls and another 6-8” of pressurized grout, built into basalt rock hill

- Resilient Across Threat Scenarios
  - Gravity-fed design allows for electricity-free fueling operations
  - Capacity and strategic access to customers (~3 miles to Pearl Harbor)
  - Electronically self-contained, making it impervious to cyber attack
  - Underground location and physical security provide unparalleled anti-terrorism and force protection defense

Tank Layout in Red Hill

Red Hill Support to National Security

- The Pacific AOR is vital to US government and world economy
- Today and Tomorrow: vital, dynamic, politically uncertain
- Red Hill is largest military fuel repository
  - Supports Army, Air Force, Navy, Marine Corps, Coast Guard, and NOAA normal and contingency operations
  - Central Pacific location vital to military and civilian emergency operations
- Infrastructure support
  - Significant funding to maintain equipment
  - Detailed preventive tank inspection/maintenance
  - Inventory control system (identifies potential leaks)
  - Ground water monitoring wells, Soil vapor analysis

Environmental Releases

- Past records (prior to 1988) indicate up to 85,000 gallons released
  - No requirement/regulation for record retention
  - Actual material and volume released not recorded
- Since 1988, one release (27,000 gallons) to environment (Jan 2014)
  - Tank #5 was source after being restored following 3 year overhaul/inspection
  - Contractor Failure:
    - Poor workmanship (pin-hole leaks on steel liner)
    - Quality Control (QC) failed to capture the poor workmanship
  - Navy Failure:
    - Quality Assurance (QA) failed to identify contractor performance and poor QC
    - Operators ignored initial alarms (incorrectly assumed erroneous alarm)
  - Tank #5 was secured and emptied and Hawaii Department of Health was notified
  - Testing frequency increased (water supplies, groundwater, and soil sampling)
  - Installed two additional monitoring wells north of Red Hill
  - EPA/DoD/DoH agreed to Administrative Order on Consent vice enforcement action

Current Situation

- Drinking water remains safe
  - Testing (drinking water and groundwater) by independent, DOH-approved, non-military laboratories using EPA test methods
  - Monitoring well network has been increased with completion of three new wells, one well currently being negotiated, and one well planned.
  - Increased sampling and soil analysis from quarterly to monthly
  - Monitoring results (including raw data) submitted to EPA and DOH
  - Other key stakeholders (BWS, DLNR, USGS, etc.) included in discussions
  - Navy continuing successful AOC progress with EPA and DOH, addressing all concerns and promoting transparency
- Tank 5 repairs were completed, but it is undergoing another complete inspection by a different contractor prior to return to service
  - All lessons learned captured and incorporated
- Navy procedures updated (any alarm is assumed leak)
- Additional contracting oversight added

Administrative Order on Consent (AOC) and Statement of Work (SOW) Status

- **Living document with many submissions, technical reviews, and adjustments**
- Section 2 - Tank inspection, repair, maintenance
  - Report submitted 11OCT16; First Decision Meeting was held 06DEC16 and final is planned for FEB17.
- Section 3 - Tank upgrade alternatives
  - Scope for work approved on 08DEC16 and Report is due 08DEC17. Additional Decision Process Document due 08SEP17.
- Section 4 – Release detection/tank tightness testing
  - Best available practicable technologies for leak detection scoping is planned to close FEB17. The final Scope of Work will be due MAY17 and the final Report will be due MAY18.
- Section 5 - Corrosion & metal fatigue practices
  - Scoping for Destructive Testing is planned to close FEB17. The final Scope of Work will be due MAY17 and the final Report will be due MAY19.
- Section 6 and 7 - Investigation & remediation of past releases and groundwater protection
  - Revise Work Plan approved 05DEC16. Additional derivative deliverables submitted: Monitoring Well Installation Plan Addendum on 04JAN17 and the Sampling and Analysis Plan on 19JAN17. The Existing-Data Summary and Evaluation Work Plan is due 05MAR17. Installation of new monitoring wells is ongoing (2 of 4 complete) with planned completion early in 2017
- Section 8 - Risk/vulnerability assessment
  - Scoping for the Risk/Vulnerability Assessment was closed on 13JAN17. The Scope of Work is due 13APR17 and the final Report is due 13OCT18.

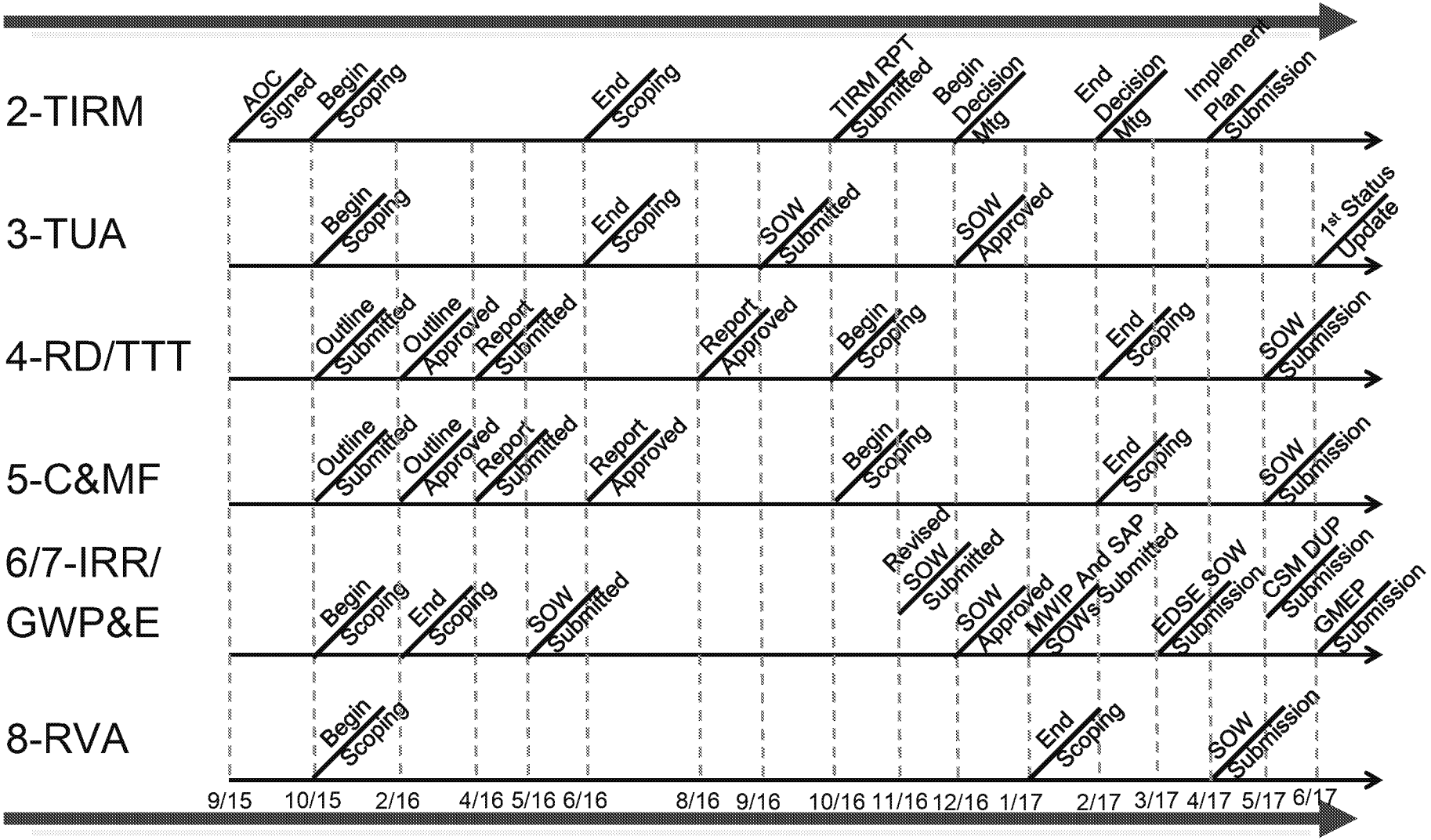
Groundwater Monitoring

- Navy's groundwater monitoring program began in 2005
- Groundwater sampling data surrounding the tanks and drinking water sampling (from 2000), shows compliance with all Federal and State drinking water standards
- Groundwater sampling (near Red Hill) identified 6 of potentially 64 chemicals of potential concern (COPC) that exceed regulatory screening levels (associated to petroleum/industrial areas)
  - Sampling reduced to 12 COPCs from 64 following 10 years of negative results to quicken chemical analysis and reporting. Two jet fuel additives were added to the list raising the total to 14. Annual/Biannual testing of all 64 COPCs will commence to reaffirm confidence in the 10 straight years of negative results.
- Monitoring well network, predictive models, and sampling processes continue to be expanded and improved

Future

- Maintain safe drinking water
  - Sampling (drinking and ground water)
- Maintain Red Hill facility to support US strategic objectives
  - Infrastructure improvements
  - Funding
  - Contractor supervision
  - Procedural compliance
- Continue development of AOC with regulators (EPA and DoH) and stakeholders (BWS, USGS, DLNR)
- Build trust with community

SOW Status



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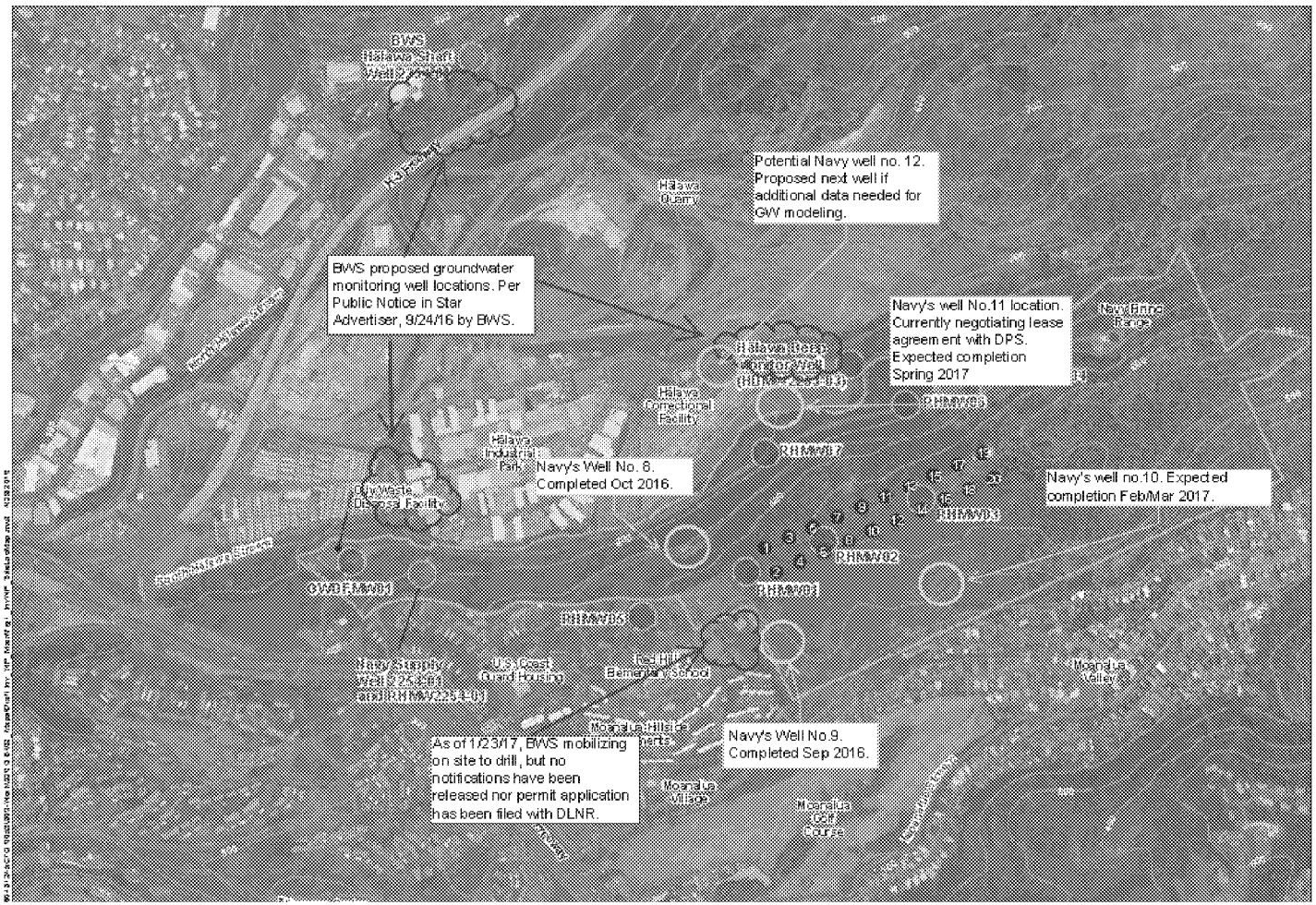
History/Background

- Constructed from 1940-43
  - Classified until 1946 for operational security
  - Remained out of the public eye until ~1995 when designated a National Historic Civil Engineering Landmark
- Developed to maintain war reserves and support DOD/DOT and commercial customers in the Pacific region
  - Predominance of petroleum held as strategic reserves
  - Refueling capability to USN, USMC, USAF, USCG, US Army, National Guard, NOAA, foreign and commercial vessels transiting to/from region
- National strategic asset supporting major Operation Plans
  - Security and capacity difficult/impossible to replicate in region

Groundwater Monitoring Network



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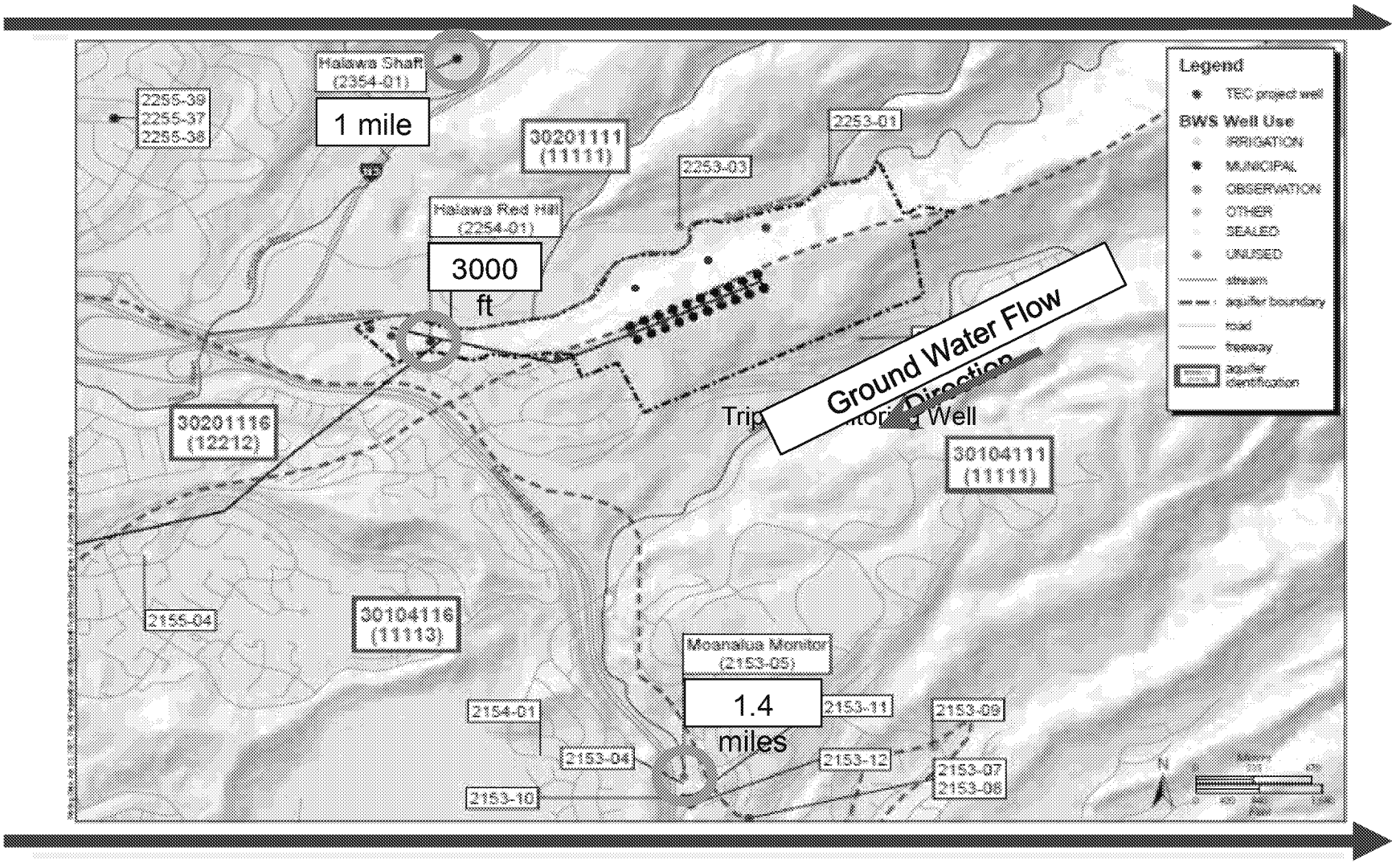
Drinking Water Wells

(proximity to closest Red Hill tank)



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